IN THE CLAIMS

1. – 4. (canceled)

5. **(currently amended)** A virtual private network construction system for a public data communication network comprising:

first relaying apparatuses with virtual relaying structure generating and multicasting control packets each of which ~~contains~~ is destined to a multicast address ~~for constructing a virtual private network~~assigned to the virtual relaying structure and contains a unicast address specific to the virtual relaying structure, and

second relaying apparatuses with virtual relaying structure, which receives the control packets from the first relaying apparatuses with the multicast address, establishing unicast virtual links ~~to~~using the unicast address in the control packets with the first relaying apparatuses which are transmitting sources of the control packets ~~upon receipt thereof~~and ~~for~~ returning reply packets to the first relaying apparatuses through the virtual links,

whereby a virtual private network is constructed with the virtual relaying structures that are specific to a same multicast address in the first and the second relaying apparatuses, with the unicast virtual links ~~are~~established between all pairs of the virtual relaying structures ~~included and independently operable per virtual private network in the first and the second relaying apparatuses to construct the virtual private networks that are preliminarily associated with the virtual relaying structures provided~~and with ~~receiving~~virtual interfaces ~~and belonging to a multicast address group represented by the multicast address~~receiving packets from outside the public data communication network.

6. (previously presented) The virtual private network construction system as claimed in claim 5 wherein the second relaying apparatuses establishing the virtual links authenticate the control packets received.

7. (previously presented) The virtual private network construction system as claimed in claim 5 wherein the virtual links comprise IP tunnels.

8. (previously presented) The virtual private network construction system as claimed in claim 5 wherein the virtual links comprise MPLS tunnels.

9. **(currently amended)** A relaying apparatus, which terminates virtual private networks within a public data communication network comprising:

virtual relaying structures ~~that are~~each of which is preliminarily associated with ~~the virtual private networks and independently operable per virtual private network~~a multicast address,

~~means~~a packet unit generating and multicasting control packets each of which ~~contains~~is destined to a multicast address ~~for constructing a virtual private network~~and contains a unicast address specific to the virtual relaying structure, and

~~means~~a link unit receiving the control packets from other relaying apparatuses with the multicast address, establishing unicast virtual links using the unicast address in the control packets with the ~~to~~other relaying apparatuses which are transmitting sources of the control packets ~~upon receipt thereof~~and ~~for~~returning reply packets to the other relaying apparatuses through the virtual links,

whereby a virtual private network is constructed with the virtual relaying structures that are specific to a same multicast address, with the unicast virtual links ~~are~~established

between all pairs of the virtual relaying structures ~~in different relaying apparatuses to~~

~~construct the virtual private network, the virtual relaying structures being provided with~~

~~receiving,~~ and with virtual interfaces ~~and belonging to a multicast address group represented~~

~~by the multicast address~~receiving packets from outside the public data communication

network.

10. (original) The relaying apparatus as claimed in claim 9, further comprising means
for authenticating the control packets received.

11. (original) The relaying apparatus as claimed in claim 9, further comprising means
for generating a routing table for each of a plurality of virtual networks logically independent
of one another, and means for performing a packet relay of each virtual network based on the
routing table.

12. (original) The relaying apparatus as claimed in claim 9 wherein the virtual links
comprise IP tunnels.

13. (original) The relaying apparatus as claimed in claim 9 wherein the virtual links
comprise MPLS tunnels.

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